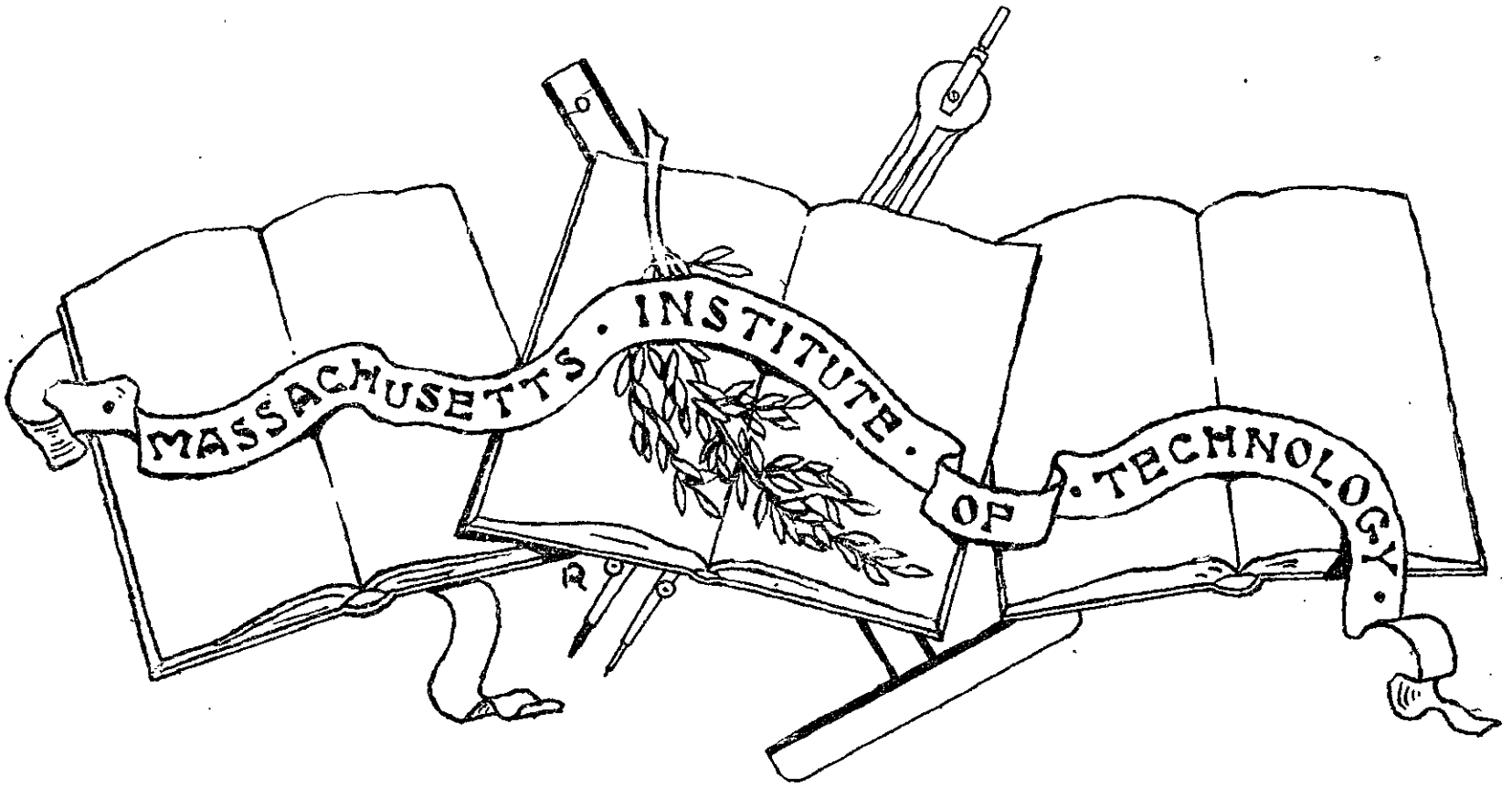
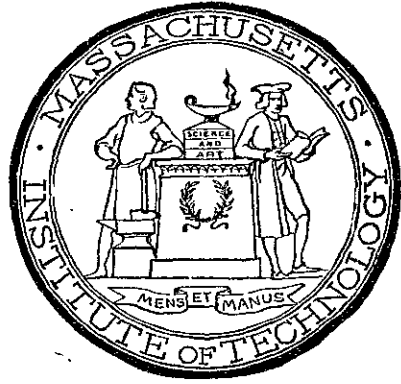




THE TECH



BOSTON, MASS.

VOLUME XVI.

NUMBER 15.

JANUARY 14, 1897.



(SUCCESSORS TO HASTINGS)

146 TREMONT STREET,
BOSTON.

Strictly High Grade
Photographs ^{AND} Portraits.

Special Rates to all M. I. T. Students.

OAK GROVE CREAMERY COMPANY,
DAIRY LUNCH ROOM.

445 BOYLSTON STREET, COR. BERKELEY, opp. Y. M. C. A. Building,

Where can be had Sandwiches of all kinds, Soups, Tea, Coffee, and regular Dairy Lunch.

EVERYTHING FIRST CLASS.

Pure, Fresh-churned Butter, in Quarter-pound Prints, 5 and 10 Pound Boxes. Pure, Fresh Milk and Cream, delivered in Glass Jars. Fresh-laid Eggs. Pure, Full Cream Cheese, American (plain), Sage, Neufchatel and Edam. All kinds of Fruit Ices.

NELSON L. MARTIN.

**WE OFFER TILL JANUARY 1, 1897,
THE APEX FOUNTAIN PEN**

FULLY GUARANTEED, FOR \$1.00.

NO FURTHER DISCOUNT.

A. D. MACLACHLAN,

214 CLARENDON STREET, BOSTON.

GYMNASIUM.

Physical Culture. Keep in Condition by using our Gymnasium.

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION,

Boylston and Berkeley Streets.

TERMS, \$10 PER YEAR.

INCLUDING ALL OTHER PRIVILEGES of the ASSOCIATION.
MEDICAL SUPERVISION.

FINE APPARATUS. CONVENIENT LOCKERS. FREQUENT CLASSES.
NEW SHOWER, SPONGE, SPRAY, AND STEAM BATHS.
FREE INSTRUCTION. OPEN, 9 A. M. TO 10 P. M.
MASSAGE DEPARTMENT—SERVICES REASONABLE.

R. J. ROBERTS, Director. GEO. I. MEYLAN, M.D., Medical Director.



L. P. HOLLANDER & CO.,

YOUNG MEN'S OUTFITTERS.

OUR ANNUAL CLEARANCE SALE COMMENCES MONDAY, DEC. 28TH,

CONTINUING THROUGH JANUARY.

Our entire Stock of Clothing, Furnishing Goods and Hats will be offered at greatly reduced prices to close.

☞ Orders taken in our Custom Tailoring Department at reduced rates.

202 to 212 BOYLSTON STREET AND PARK SQUARE, BOSTON.

THE HAT OF THE SEASON.

SPECIAL ATTENTION

Given to Technology Uniforms.

STYLE



PRICE,

1616

\$2.00.

Special 1616

has all the characteristics of a \$3.00 hat and costs but \$2.00.

THE LARGEST STOCK IN BOSTON OF

NOBBY ÷ SUITS ÷ AND ÷ OVERCOATS.

CONTINENTAL CLOTHING HOUSE,

COR. WASHINGTON AND BOYLSTON STREETS.

LEYLAND LINE •• BOSTON AND LIVERPOOL
THE LOWEST RATES CROSSING THE ATLANTIC.

These Steamers are appointed to sail from BOSTON EVERY WEDNESDAY, from Pier 6, Boston and Albany Docks, East Boston, and from LIVERPOOL EVERY SATURDAY.

These new and immense steamships are the largest vessels sailing from Boston, and have a limited number of staterooms for first-cabin passengers at very moderate rates. No steerage carried.

The staterooms are large and roomy, and are located on the top or Bridge Deck, thus insuring the best of ventilation. For passage, cabin plans, etc., apply to . . .

The Adams Cable Codex, a Cipher Code; the most complete publication of its kind issued for Circulation among Travelers.

F. O. HOUGHTON & CO.

General Passenger Agents,
115 State Street, corner Broad Street, BOSTON.



J. C. LITTLEFIELD,
Tailor • and • Outfitter,
21, 23 BEACON STREET, BOSTON.

I can offer you a larger and more complete assortment than can be seen elsewhere, and at lower prices for the same qualities. Look in and examine my prices before placing your order.

GOLF BREECHES, RIDING BREECHES, AND DRESS SUITS A SPECIALTY.
DISCOUNT TO STUDENTS.

TRADE MARK

COLLINS & FAIRBANKS
CELEBRATED

HATS

SOLE AGENTS FOR HENRY HEATH'S AND A.J. WHITE'S LONDON HATS.

STYLES CORRECT
QUALITY UNEQUALLED

381
WASHINGTON ST. BOSTON

Wm Brooks & Co
Importing Tailors

15 MILK STREET,
OPPOSITE OLD SOUTH CHURCH

BIRTHPLACE OF FRANKLIN.

BIRTHPLACE 1706

LONDON OFFICE, 6 SAVILE ROW, W.

THE LARGEST ASSORTMENT OF FOREIGN WOOLLENS SHOWN IN BOSTON

M. I. T. CO-OPERATIVE.

THE TECH

VOL. XVI.

BOSTON, JANUARY 14, 1897.

NO. 15

THE TECH

Published every Thursday, during the college year, by students of the Massachusetts Institute of Technology.

CHARLES-EDWARD AMORY WINSLOW, '98, *Editor in Chief*.
CLARENCE RENSRAW, '99, *Assistant Editor in Chief*.
THOMAS EDDY TALLMADGE, '98, *Secretary*.
HARRY DRAPER HUNT, '97.
MORRIS KINNARD TRUMBULL, '97.
WARD WELLINGTON WARD, '98.
HAROLD WELLINGTON JONES, '98.
GEORGE REED WADSWORTH, '98.
WILLIAM EATON WEST, '99.
JOHN MAGEE, 2d, '99.

W. R. STRICKLAND, '98, *Business Manager*.
E. R. SHEAK, '99, *Ass't Business Manager*.

Subscription, \$2.50 per year, in advance. Single copies, 10 cts. each.

For the benefit of students THE TECH will be pleased to answer all questions and obtain all possible information pertaining to any department of the College.

Contributions are requested from all undergraduates, alumni, and officers of instruction. No anonymous manuscript can be accepted.

Frank Wood, Printer, 352 Washington Street, Boston.

Entered in Post Office, Boston, Mass., as Second Class Matter.

THE whole college owes its thanks to those in charge of last Friday's ceremonies for the solemn and beautiful manner in which the services were conducted. Especially are the undergraduates grateful for the thoughtfulness which enabled them all to take some part in showing their sense of the blow which has fallen upon them. There was no sentimentality at the funeral; rather a dignified sorrow, borne almost with cheerfulness. This is as he would have wished it, whose watchword was always hope and not despair, and whose example now will always be a strength and an inspiration, as his presence was in his life.

THE beginning of the examinations for the third and fourth years next Tuesday marks the close of the first term, and the approach of the welcome pause in the work of the year. For most of us the time has passed quickly. The second term is of far greater

interest to all Institute men, be they Seniors, Juniors, Sophomores, or Freshmen, and will pass more rapidly than the first has done.

It is in this part of the year that almost all of the events of importance and interest take place. The class dinners and the festivities of Junior Week are held, "Technique" appears, out-door work in athletics is again taken up, the Seniors choose the subjects for their theses, important outside tests are made by some of the students, and an intercollegiate drill is held.

All these events will help us to make THE TECH more interesting, and the Editors hope to repay the encouraging support they have received from students and alumni.

This number is the last for the term, and the next issue will come out on February 18th.

IT is needless to say that the students at Technology are intensely interested in the approaching semies. We feel, however, that the Freshmen and Seniors have a peculiar interest that is worthy of remark.

The Freshman is disposed to feel at this season that the question is soon to be decided as to whether his coming to Tech. was ill advised or not. This is not the proper attitude to assume; and if it were, the result of one series of examinations is not sufficient ground upon which to base an ultimatum as to a man's ability to continue study here as a candidate for a degree. The proper spirit is to uphold the judgment as sound that prompted him to enter, and with manly determination to qualify creditably in all branches. The men who compose the upper classes to-day were of no higher caliber when they underwent their first semies than the Freshmen who are now about to do so; but they possessed one quality

which it will be well for every First-year man to cultivate in the coming weeks, and that is, a self-confidence in a future growth, coupled with persevering effort in the present. His choice of courses is at hand. It is well at this point for him to consult his adviser, while in the end he should choose the course to which his inclinations and best judgment urge him. In any event little mistake can be made, while the rectification of an error of judgment can be successfully accomplished at the end of the year.

The Senior, on the other hand, having successfully passed through the mazes of six examination times, realizes that upon the outcome of the coming test depends in a large measure his hopes of receiving a sheepskin in June. He wishes anxiously to have his record clear, so that there may be the less apprehension at the close of the year, and that his time may be undividedly devoted to thesis work. The choice of a thesis subject must soon be made. He wishes this to be a masterly production, as upon its treatment rests so often a graduate's recognition by professional men.

He feels that Technology's portals are ere long to be opened to admit of his departure, and he wishes earnestly that this farewell may be one of which he can well be proud.

MR. GRANT BRAMBEL, an Englishman living in Minnesota, claims to have invented and perfected a new rotary engine, which he has been working on for twelve years, and only recently completed. If the assertions made in regard to it are substantially correct, this machine would seem to revolutionize the mechanical world, for in efficiency and economy of space it far surpasses the ordinary engine. The inventor claims to have run successfully a 240 horse power engine of his type, the dimensions of which were but $\frac{1}{2}$ x $1\frac{1}{2}$ x 2 feet, with a 120 horse power boiler; and similarly, with a 20 horse power boiler, to have worked a 65 horse power engine when tripled. The statements seem incredible, yet

he claims to have patents in France, Belgium, and Germany, and just now to have sold the English and American rights to so respectable a company as the Allen Engineering Syndicate, of Liverpool, for \$7,100,000.

THE Editors of THE TECH wish to express their regret at an unfortunate mistake which has only just been brought to their notice. A list of the names of several graduate class secretaries which should have been on the mailing list, must have been mislaid at the beginning of the term, for the papers have not been sent. The Editors wish to apologize for this accident, and will try to rectify it in the future. If anyone who should receive a paper fails to do so, he will confer a favor by sending notice of the fact at once.

THE Editors of THE TECH, in view of the numerous bodies of undergraduates that have drawn up resolutions, have decided to publish in full only those adopted at the mass meeting as including all the rest.

Resolution.

INASMUCH as it has pleased Divine Providence, in his infinite wisdom, to remove from among us one of our number, Samuel Hinckley Allyne, be it

Resolved, That we, the members of the Class of '98 of the Massachusetts Institute of Technology, do hereby extend to the sorrowing family our heartfelt sympathy and assurance that we suffer with them in the loss of one who was alike near and dear to us as a friend and classmate. And be it further

Resolved, That these resolutions be entered in the minutes of the class, published in THE TECH, and a copy sent to parents of deceased.

For the class,

HERBERT IVORY LORD.
LEROY HENRY BYAM.
LEON ALLAND.

Funeral Services of President Walker.

THE services were held Friday, January 8th, at noon; and although the plan of having only a few delegates to represent each of the organizations which had claims of interest in General Walker was adopted, the seating capacity of Trinity Church was taxed to its utmost.

Delegations were present from the following bodies: the National Academy of Sciences, Yale College, Harvard College, the Worcester Polytechnic Institute, the Museum of Fine Arts, the Public Library, the Military Order of the Loyal Legion, the St. Botolph Club, the Commercial Club, the Delta Kappa Epsilon Fraternity, the American Historical Association, the American Statistical Association, Wellesley College, the English Bimetallic League, the Round Table Club, the Municipal League of Boston, the Board of Aldermen, and the Council. One hundred delegates, chosen by lot from each of the classes, represented the Institute.

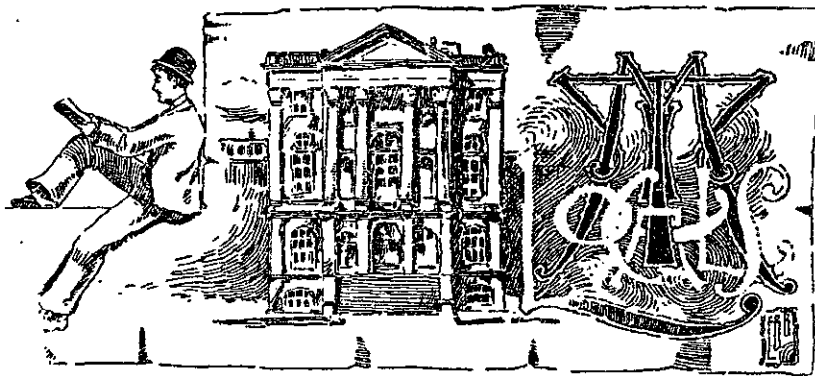
There were honorary pall-bearers as follows: Representing the Commonwealth, Governor Wolcott; the city, Mayor Quincy; the National Academy of Sciences, Professor Asaph Hall; the corporation of the Institute of Technology, Hon. William Endicott, Jr.; the Faculty of the Institute, ex-President John D. Runkle; Executive Committee of the corporation, Colonel Thomas L. Livermore; Amherst College, President Merrill E. Gates; Yale University, Dr. George J. Brush, director of the Sheffield Scientific School; Harvard University, President Eliot; Military Order of the Loyal Legion, Colonel John S. Hazard; Museum of Fine Arts, Colonel Henry Lee; Massachusetts Historical Society, Hon. Samuel A. Green; Military Historical Society of Massachusetts, John C. Ropes; St. Botolph Club, Solomon Lincoln. The student bearers were Benjamin Hurd, H. W. Allen, H. A. Noble, Carl Schuttler, Lewis Stuart, Edward Johnson, Jr., F. C. Field, W. O. Sawtelle.

The following students served as ushers: Messrs. G. H. McCarthy, F. N. LeBaron, A. C. Lamb, P. L. Dougherty, S. L. Howard, T. Washburn, C. W. Bradlee, G. R. Wadsworth, C.-E. A. Winslow, G. F. Ulmer, T. E. Tallmadge, J. S. Bleecker, H. W. Jones, A. L. Hamilton, R. Frazier, T. P. Robinson, E. H. Hammond, P. B. Cooper, M. W. Hall.

Although in deference to the wishes of the family there was no suggestion of a military funeral, the students were allowed the privilege of marching in front of the hearse to the church. The students formed at the corner of Beacon and Dartmouth Streets, under the direction of Captain Bigelow and the following marshals and aids: Messrs. Olin and Collins, '97, Grosvenor and Robinson, '98, Renshaw and Shumaker, '99, and Roberts and S. J. Fitch, 1900. At the church those who were delegates entered by the west vestibule, while the remainder marched by. The aids to the committee in charge of the funeral, of which Professor Sedgwick was chairman, were: W. C. Potter, J. P. Ilsley, Jr., W. Humphreys, E. F. Russ, A. L. Swasey, G. A. Hutchinson, R. W. Stebbins, W. M. Corse, J. H. Batcheller, C. M. Leonard.

The coffin was covered with flowers. The services were conducted by Rev. E. Winchester Donald, D.D., rector of the church, assisted by Rev. William Dewart. After the burial service of the Episcopal Church, the body was interred at Mount Auburn. During the funeral the City Hall and the Public Library were closed.

A SEVERE shock was felt at the sudden death of Major B. S. Calef last Saturday. Major Calef was manager of the Manhattan Life Insurance Company, and acted as marshal at President Walker's funeral on Friday, having direction of the undergraduate ushers. Shortly after the service he felt unwell, and finally death ensued from heart failure.



Senior Chemists, Course X., have begun reading Andés' "Maschinenöle."

The Princeton Football team made a profit of \$14,787 during the fall season.

Mr. W. S. Rhodes is preparing a large geological wall map of western Massachusetts.

Mr. Swan, instructor in Naval Architecture, will be abroad all winter perfecting his knowledge in that subject.

Boston University dedicated its new Law School building last Friday with appropriate exercises. The address of the day was made by Mr. Justice Holmes, of the Supreme Court.

Der Deutsche Verein seems to have recovered from her recent active reorganization state with remarkable quickness. At a recent meeting only three members were present.

At a mass meeting of the students on Tuesday morning, a committee, consisting of the four class presidents, Messrs. Bancroft, Wadsworth, Hammond, and Cooper, and Mr. Hurd, was appointed to draw up resolutions on the death of President Walker.

A special meeting of the Electrical Engineering Society was held on Wednesday morning, January 6th, to take action on the death of President Walker, who was an honorary member of the Society. A committee was appointed to draw up resolutions.

It seems very probable that, in the near future, the Corporation will build a small structure in some isolated spot for the study of pendulum motion and of delicate electrical charge. Such a building is badly needed,

and the small expense required to build it would be well spent.

The references in *THE TECH* of last week to the concert of the Glee Club at Salem, and to the "smoker" of the Architectural Society, were both in error. The second corps of Cadets kindly allowed the musical clubs to cancel their date, and Mr Andrews' talk to the Architects was also given up.

In the preliminary trial for the selection of speakers to represent the University of Pennsylvania in its coming debate with Cornell, a woman won a place in the first ten. From these ten, three speakers and an alternate will be chosen. This is the first time at the University that a woman has won such honors.

The next meeting of the Geological Club will be held next Friday, January 15th, at 4 P. M. This meeting will be of the nature of an informal reception and exhibition of new specimens. All students are invited to attend. The specimens will be on exhibition from four to five, in the Geological Laboratory, Room 14, Rogers, and the members of the instructing staff will be present to explain them.

A quick piece of engineering work was carried out one Saturday night, recently, on the Great Eastern Railway, near Ely. An old bridge of one hundred and thirty feet span over the River Ouse was taken down in six hours, and a new single-span bridge, that had been erected alongside, was lifted up on a set of trolleys, and put in its place in two hours more, only one regular Sunday train having been delayed.

During the suspension of recitations, a party of students paid a visit to the Charlestown Navy Yard, especially inspecting the Government rope walk. The carding and spinning machinery proved most instructive and entertaining, the process of spinning, particularly, being altogether novel. In order to spin a continuous rope of any required length, the walk has a length of something over twelve hundred feet.

At a meeting of the Executive Committee of the Alumni Association, held January 8th, to take action regarding the death of President Walker, it was voted that a memorial service be held within the next month in Huntington Hall. It was further voted to invite the Corporation, Faculty, Society of Arts, Members of the Instructing Staff, Technology Club, other branches of the Alumni Association, and delegates from the student body, to co-operate with the general Alumni Association in this service.

On Monday, January 4th, the Industrial Chemistry division was addressed by Mr. Charles D. Jenkins, State Inspector of Gas, on the manufacture of pottery and tiles. The lecture was illustrated by numerous examples of native and foreign wares. In addition, and by the lecturer's kindness, printed abstracts of the lecture were distributed to the class, by means of which a clearer comprehension of the subject was obtained, and far more ground covered in the allotted time than would otherwise have been possible.

A mass meeting of the students of the Institute was held on Thursday at three o'clock. Over a thousand men must have been present, and Huntington Hall was taxed to its utmost capacity. Mr. Hurd reported three resolutions addressed respectively to the family of the late President, to the Corporation, and the Faculty. These were adopted unanimously by rising votes, and are printed in another column of THE TECH. A fourth resolution to the effect that the students wear mourning for thirty days, and give up all club dinners and entertainments for the same period, was also adopted. Mr. Winslow moved that a committee of three be appointed to make arrangements for a memorial to President Walker, with power to collect subscriptions for such a purpose, and mentioned the fact that a very successful cast had been already taken by William Ordway Partridge, from which a bust might be made. The motion was carried, and Messrs. Winslow,

Hurd, and Washburn were appointed on the committee. Professor Sedgwick then spoke of the impossibility of all the students being in the church, and of the arrangement by which all could take part by walking in procession from the house, while a hundred men, chosen by lot, would represent each class inside. Captain Bigelow then spoke as to the details of this procession. After the meeting, small crepe rosettes were given out to be worn as the thirty days' mourning.

Resolutions.

TO MRS. WALKER AND THE FAMILY:—

WHEREAS, It has pleased Almighty God to take from us our beloved President, whose noble character and beautiful personality won the respect and love of all;

WHEREAS, In the death of Gen. Francis Amasa Walker our college has lost one who generously gave his magnificent talents and splendid strength to her upbuilding; one whose unselfish labors and tireless devotion made so secure her present and her future;

WHEREAS, We, the students of the Massachusetts Institute of Technology, have lost one whose life was an inspiration never to be forgotten; one who, highly as he valued scholarship, sought first to teach us to be men;

Resolved, That while we humbly say, "Thy will be done," we feel that time itself can hardly make less keen the grief for so brave a leader and so true a friend.

Resolved, That we extend to Mrs. Walker and their children in this great sorrow that deep sympathy which our own personal loss teaches us to feel.

Resolved, That a copy of these resolutions be sent to the family, and that they be printed in THE TECH and the Boston papers.

TO THE CORPORATION:—

WHEREAS, By the death of her President, the Massachusetts Institute of Technology has suffered a loss which, were it not that the

works and the memory of Francis Amasa Walker cannot perish, would threaten her existence;

WHEREAS, From the friends of our college has been taken that leader so great that he drew all to him, so good that he brought forth the best in all he met;

WHEREAS, Deeply as we mourn for him who was our dearest friend, we remember that his example teaches us in this hour of sorrow to think first of others;

Resolved, That we, the students, extend to the Corporation of the Massachusetts Institute of Technology that sympathy which our keen appreciation of our own great loss makes us feel for all who mourn with us to-day.

TO THE FACULTY:—

WHEREAS, By the death of Francis Amasa Walker there has been taken from the friends of the Massachusetts Institute of Technology that brave leader whose wise counsel and tireless energy made so secure her fame;

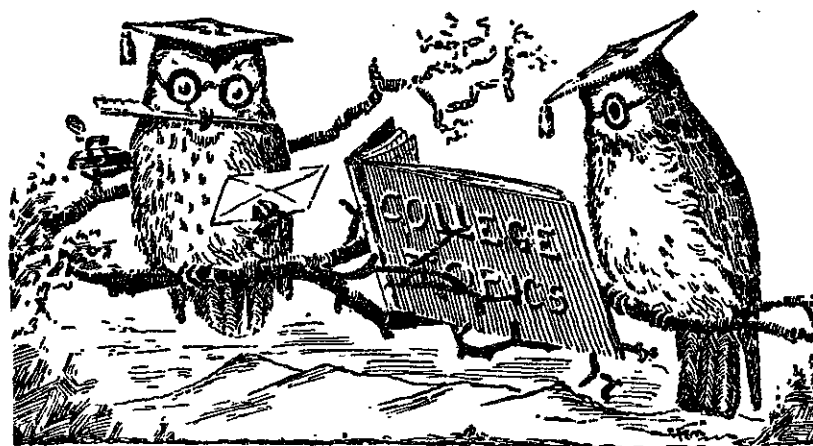
WHEREAS, Deeply as we, the students of the Institute, mourn for him who was our dearest friend, we know full well that we are but a few of those who grieve. We know that in this dark hour he would have us think not of ourselves, but of those who have suffered even more than we.

Resolved, That to our Faculty, from whom has gone their inspiration and their guide, we extend our deepest sympathy.

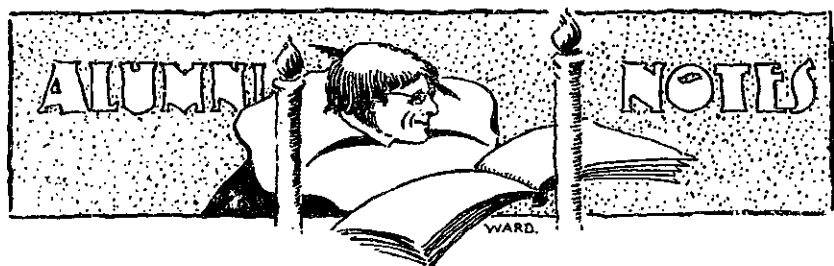
For the students,

WILFRED BANCROFT.
GEORGE REED WADSWORTH.
EDWARD HOSMER HAMMOND.
PHILIP BENSON COOPER.
BENJAMIN HURD.

Resolutions have also been received from the Sigma Tau Chapter of the Delta Kappa Epsilon Fraternity, from the Civil Engineering Society, from the Electrical Engineering Society, from the M. I. T. Y. M. C. A., and from the Technology Chapter of the Delta Upsilon Fraternity.



A noteworthy event in the annals of technical education in the United States will be the forthcoming celebration of the twenty-fifth anniversary of the Stevens Institute of Technology, on the 18th and 19th of February next. The festivities will consist of a banquet at the Hotel Waldorf, New York, to which representative engineers and technical educators throughout the country will be invited. On the following day the Institute will be open for inspection, and the methods of instruction, together with the apparatus in the various laboratories will be explained. Not the least interesting feature of the exhibition will be the collection illustrating the work of the alumni, and consisting of machinery, apparatus, drawings, etc., representing the product of their activity during the twenty-five years. The Stevens Institute of Technology was founded by the late Edwin A. Stevens, of Hoboken, N. J., and in 1870 the erection of a building was commenced by the Trustees, Mrs. E. A. Stevens, Mr. S. Bayard Dod, and Mr. W. W. Shippen. Dr. Henry Morton, at that time Secretary of the Franklin Institute of Philadelphia, was tendered the presidency of the Institute, and gathered a faculty of eight members about him. To this number others have from time to time been added as the work of the Institute increased, until at the present time the Faculty includes twenty-two professors and instructors. The total number of student graduates is six hundred and seventy-five, and the number in attendance during recent years has been about two hundred and sixty each year.



'73. F. W. Very, Course V., who is professor of astronomy at Brown University, is at present Acting Director of the Ladd Observatory.

'76. A. C. Kilham, Course II., now holds the position as storekeeper with the St. Louis and San Francisco Railroad.

'76. J. H. Susmann, Course III., who was last year connected with the Consolidated Kansas City Smelting and Refinery Company, is now the Mining Engineer with the Canadian Pacific Railway.

'77. J. A. Kebler, Course I, has been appointed second Vice President of the Colorado Fuel and Iron Company.

'82. H. V. Frost, Course V., is chemist for the Anglo American Provision Company, and occupies a like capacity with the Fowler Bros., Limited, of Chicago.

'83. Charles H. Tompkins, Jr., Course III., occupies the position as president of the American Diamond Rock Drill Company, New York. To take up this work Mr. Tompkins resigned his position as assistant superintendent of the Pennsylvania Steel Company.

'85. Heywood Cochran, Course II., is Treasurer of the Cochran Machine Company, Johnstown, Pennsylvania.

'86. Geo. W. Farmer, Course II., has been appointed engineer of tests with the A., T. and S. Fe Railway, Topeka, Kansas.

'86. C. Belle Kenney, Course V., is instructor at the Quincy Mansion School, Wollaston, Mass.

'86. Alex. Rice McKim, Course I., President of the New York Alumni Association, and a former chairman of the Board of Direc-

tors of THE TECH, was in THE TECH office Friday morning.

'87. F. G. Burgess, Course I., is editor of the *Lark*, San Francisco, California.

'87. H. C. Spaulding, Course II., is manager of the New England Office of the Manhattan General Construction Company.

'90. John R. Hall, Course VI., is in business as an electrical engineer in Redlands, Cal.

'90. Miss S. G. Hayden, Course IV., of this city, has changed her business from that of architect to designer.

'91. F. E. Norton, Course II., is at present in Johannesburg, S. A., for Sheriff, Swinghley & Co.

'92. Louis Schmidt, Course V., has a position as chemist on the Ohio Dairy and Food Commission.

'93. Frederick D. Smith, Course I., civil engineer, has been appointed inspector of the Neponset Valley Sewer.

'94. Leslie R. Moore, Course V., is studying at Heidelberg University.

'94. H. A. Swanton, Course II., is employed as a draughtsman in the Crescent Ship Yards, at Elizabeth, N. J.

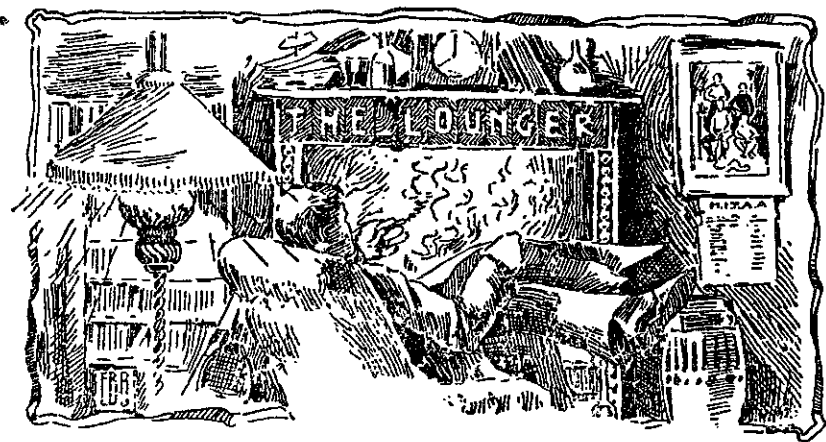
'96. K. A. Pauly, Course VI., is acting as inspector of New England Telephone Co., at Cambridge.

'96. Walter M. Hollis, Course VI., is with the S. J. Hollis Shoe Co., of Lynn.

'96. Robert A. Davis, Course VI., is acting as draughtsman with Henry & Co., of this city.

'96. Russell S. Bucher, Course IV., and Charles K. B. Nevin, Course IV., are in the employ of Chas. L. Allen, architect, of this city.

'96. Walter M. Stearns, Course VI., has been appointed Assistant Superintendent of the Waltham Gas and Power Company. We congratulate Mr. Stearns on this signal success.



THERE are times when even the most seemingly worldly and flippant are transformed, possessed by feelings hitherto latent and unsuspected, hidden as a rule under every sort of foible and petty conceit. Technology was assuredly a changed place last week. The drooping flag,—the empty rooms,—the silent corridors,—were such as have not been seen since the solemn event in Huntington Hall on the graduation day of the Class of '82. It was touching, too, to see the subdued greetings of instructors and undergraduates as they met here and there and seemed to be bound close to each other in the comradeship of sorrow. It was impressive to watch the long line of men marching across Copley Square, and still more their array of solemn faces in the church. But most touching, perhaps, of all was the sight of the well-known office in Rogers. The table was still littered with books and papers and all the material of a busy life; even letters lay half opened, just as they had been left on Monday.

The life whose close we mourn was nevertheless a rarely complete one. It was rounded and finished in every detail, and stands a perfect whole. There was nothing more wanting to it,—no great work uncompleted, no crown yet unattained. And perhaps this is why the services on Friday had less of sorrow than of solemn triumph in them.

The season has set in gloomily over us, and the weather alone would tend to make the world seem dark. Few people perhaps realize the strong power which the atmosphere exercises over their mental condition. Moods of all kinds are due in great part to the sunshine or the shadow in the physical world, and the only refuge of the mind is in the exercise of a strong imagination. There are those who can warm themselves in winter by their inner picturing of a summer day, and cool themselves in July by thinking of the driving snow. When, therefore, the gloom

of a New England winter oppresses, it is very pleasant to recall the past; and amid the dismal snow and slush, one loves to look back to some rich autumn afternoon, when the setting sun cast long shadows over the hillsides, and one wandered through a grove of pines or across a stony pasture dotted with white birch, and said words perhaps that helped to stamp the scene forever on one's mind. Or the memory comes back of an evening on the water, when the summer moon hung low behind a clump of trees, and from surrounding craft half-heard tones were borne across the water while one's own voice was pitched in a key quite inaudible save to a single person. Or the picture perhaps is present of a bright spring morning and a green bank under an oak tree where one might lie and read—aloud. But the Lounger is rambling, and the Business Manager will complain of him for wasting costly type on mere idle reminiscence.

The Biological Department is very convenient to the Lounger's sanctum, and thus it often happens that he ventures thither in search of mental pabulum, and seldom without result. On his last visit a series of neat tabulations upon a paper tacked to the wall attracted his attention. Its meaning was explained as follows by one of the bespectacled denizens of the place, who condescended to look up for a moment from the German tome over which he was poring. It seems that three Senior Biologists, in quest of information, and with a view to ascertaining the exact value of the lunch-room fare, now weigh themselves each day before and after consuming their mid-day meal. At the end of a month a curve is to be constructed which will include the results, and whose character the Lounger would not attempt to describe, lest the effort should recall painful memories of his struggles with Analytic Geometry some years ago. This investigation is one that promises to bear a good and valuable result; and the Lounger will be happy to help on the work in any way possible.

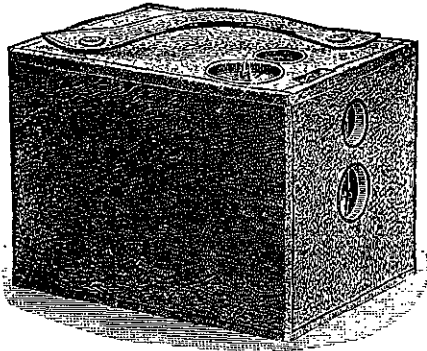
THE ALL-AROUND MAN.

In the fall he played at football,
And played the season through.
In winter he played a banjo,
And sang in the Glee Club, too.
In the spring he swung a racquet,
And baseball, too, played he.
In one year he graduated
With the degree "G. B."

—Bowdoin Orient.

Photography Simplified.

Picture taking with the Improved Bulls-Eye camera is the refinement of photographic luxury. It makes photography easy for the novice—delightful for everybody.



LOADS IN DAYLIGHT with our light-proof film cartridges. Splendid achromatic lens, improved rotary shutter, set of three stops. Handsome finish.

Price, Improved No. 2 Bulls-Eye, for pictures 3 1/2 x 3 1/2 inches,	\$8.00
Light-proof Film Cartridge, 12 exposures, 3 1/2 x 3 1/2,	.60
Complete Developing and Printing Outfit,	1.50

EASTMAN KODAK CO.

Booklet Free.

Rochester, N. Y.

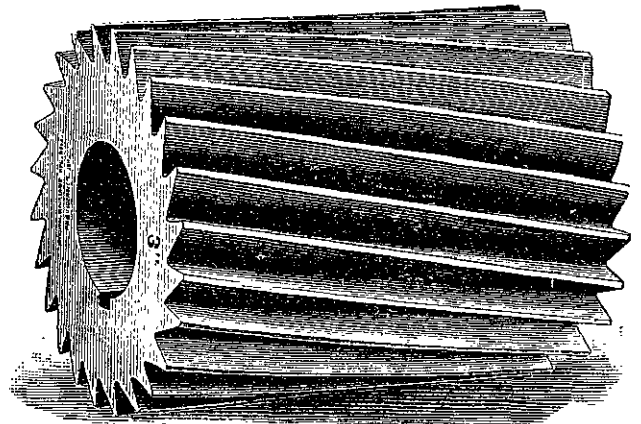
Brown & Sharpe Manfg. Co.,

PROVIDENCE, R. I.

WE COMMENCED THE MANUFACTURE OF

CUTTERS

In 1864, and now have 1,523 sizes listed in Catalogue. Leading hardware dealers have all common sizes in stock.



CATALOGUE (three hundred and sixty-six pages, thirty-five devoted to Price List and Information relating to Cutters), also Folder—"SUGGESTIONS REGARDING CUTTERS," mailed on application.

Made of 5% Nickel Steel Tubing.

Strongest Bicycles in the World.

\$100 TO ALL ALIKE.

POPE M.G. CO.
Hartford, Conn.
Send 2-ct. Stamp for Catalogue.

BICYCLES

If You Draw,

PURCHASE YOUR . . .

Drafting Instruments,
Drawing and Blue Process Papers,
Scales, Triangles, Curves,
T Squares, Colors, etc.,

FROM THE MANUFACTURERS.

Wadsworth, Howland & Co.,

INCORPORATED,

Branch Store: Grundmann Studios,
adjoining Architectural Building.

Main Office: 82 & 84 Washington St., Boston.

Factories: Malden, Mass.

SPECIAL RATES TO STUDENTS.

**ALBERT BENARI,
Tobacconist,**

33 TREMONT STREET, - - BOSTON, MASS.

Agent for the Bohemian Mixture.

FINE LINE OF FRENCH BRIAR PIPES ALWAYS
ON HAND.

New Tech Pin.

HENRY GUILD & SON

Have the best Tech Pin yet for 75 cents; also a combination of gold and silver for \$1.00, and Solid Gold at \$3.00. For sale at the Institute and

433 Washington St., Boston.

WRIGHT & DITSON...

Athletic Outfitters to the leading Colleges, Schools, and Athletic Clubs of New England.

BASEBALL

Supplies of Every Description for
Athletic Sports.

Tennis, Golf, Cricket, Track, and Field
Supplies. Gymnasium Equipments.

Discus Throwing.— Full line of Supplies for
this popular sport.

Estimates and Samples for Team Uniforms, etc.,
furnished on short notice. Secure our rates
before purchasing. Special attention to mail
orders. Catalogue free.

WRIGHT & DITSON,

344 Washington Street, Boston, Mass.



MANDOLIN, Banjo and Guitar Lessons.

Instruments, Best Strings, Latest Music, etc.

G. L. LANSING, No. 171 Tremont St.

Ask for Mr. Lansing.

GAREY, TEACHER OF DANCING.

212 BOYLSTON STREET, HOLLANDER BUILDING.

Most convenient location in the city. Classes
for Beginners and Advanced Pupils.

PRIVATE LESSONS.



MESSENGER & JONES,

Makers of

Men's Clothes,

388 Washington St., Boston.

**RIDING, KNICKER AND GOLF WORK
A Specialty.**

STUDENTS

Are cordially invited to inspect our work, which is a model
of neatness, and artistically done. None but competent
men employed.

Your patronage is respectfully solicited.

ERNEST M. ALEXANDER,

Copley Square Hotel.

Hair Dressing Parlor,

Cor. Exeter Street and Huntington Ave.

THE BRUNSWICK

BOSTON.

Boylston and Clarendon Streets,

(Adjoining Copley Square)

Near the Museum of Fine Arts,
New Public Library, New Old
South Church, and opposite
Trinity (Phillips Brooks')
Church, and Institute
of Technology.

**KEPT ON BOTH AMERICAN AND
EUROPEAN PLANS.**

BARNES & DUNKLEE, Proprietors

H. H. BARNES, Manager.



Scientific Books

DAMRELL & UPHAM,
The Old Corner Bookstore,
283 Washington St., Boston.

CLASS-DAY INVITATIONS,

BLANK BOOKS, FOUNTAIN PENS,
CAN BE FOUND AT THE CO-OPERATIVE STORE,
H. H. CARTER & CO., 5 Somerset St., near Beacon.

Bookbinding

IN EVERY STYLE.

ALEX. MOORE, 3 School Street, BOSTON.



Week beginning January 18, 1897.

Park Theatre.—It is always pleasing to note the success of a meritorious play, and still more so when it is so decidedly amusing and so well presented as "My Friend from India." The play is limited to only one more week.

Boston Museum.—"The Strange Adventures of Jack and the Beanstalk," at the Museum, is receiving the rousing welcome the charming extravaganza deserves. The music is fascinating, melodious and original, the book very clever, and the scenic display and costumes gorgeous.

Hollis Street Theatre.—The fashionable audiences which pack the Hollis Theatre from the footlights to the ultimate rail, must be an inspiration to Mr. John Drew. "Rosemary" enters upon its last week on Monday, 18th, and the indications

are that the remaining nights will be brilliant in the best sense of that most abused word.

Tremont Theatre.—Judging from the crowds besieging the ticket office at the Tremont, it is easy to predict that "standing room only" will be the sign hung out during the last week of Francis Wilson's engagement at the Tremonts. This is certainly the best performance that he has ever offered the patrons of comic opera. Don't miss it.

Castle Square Theatre.—The opera season at the Castle Square Theatre continues to receive a liberal support from Bostonians, it being evident that the selections of works made by Mr. J. J. Jaxson, the director of the company, meets the popular approval. The popular old favorite, "The Gondoliers" is to be given for the week beginning January 18th, and there is no doubt about "The Gondoliers" receiving a rousing reception.

Boston Theatre.—"Brian Boru," the comic opera now running at the Boston Theatre, is said by Jean de Reszke to be "the best comic opera of the day." There is a brightness and vivacity about "Brian Boru" that cannot be found elsewhere.

The Zoo.—Chiquita, the Cuban atom, still holds continuous receptions. Vast collection of animals, and in addition to the large number of attractions, there are forty Japs, with tricks and fun for all.

LEADING OUTFITTERS

OF

High Grade Mackintoshes

AT POPULAR PRICES.

For the Principal Colleges in New England,
Regular Co-operative Discounts.

CLEVE & KRIM,

49 Summer Street, Boston.

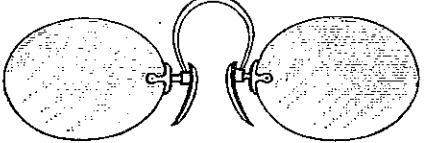
Six Floors of Stationery.

We occupy the entire building, Nos. 49 and 51,
for the Stationery Business. Buy direct
of the manufacturers.

SAMUEL WARD COMPANY,

No. 49 Franklin Street,
Boston.

Rimless Glasses.

25 per cent  Discount.

CO-OPERATIVE LIST.

Oculists' Orders Filled.

FACTORY ON PREMISES.

MAIL ORDERS A SPECIALTY.

CATALOGUES MAILED ON APPLICATION.

C. E. DAVIS,

Manufacturing and Prescription Optician,

2 PARK SQUARE - - - BOSTON.

I FLIGHT. ELEVATOR.

Trinity Court Café and Dining Rooms

European and American Plan. Table d'Hote Lunch, thirty-five and fifty cents, from 12 to 2.30. Breakfast, from 7 to 9, fifty cents. Dinner, from 6 to 8, sixty cents. Unexcelled cuisine. Choicest Wines, Liquors, and Cigars. Banquet Halls that will accommodate from three hundred to five hundred people, amply provided with reception, ante, and coat rooms. Orders for Refreshments or Banquets of any size promptly attended to. Decorations and service in the latest up-to-date style.

HALF PORTIONS SERVED,
ALSO SMOKING IN GENTLEMEN'S CAFÉ.

H. E. Sharpe, Proprietor.

HIBBARD & MASON

(INCORPORATED)

Tailors,

MUSIC HALL PLACE,

Telephone 579.

Off WINTER STREET.

BOSTON.

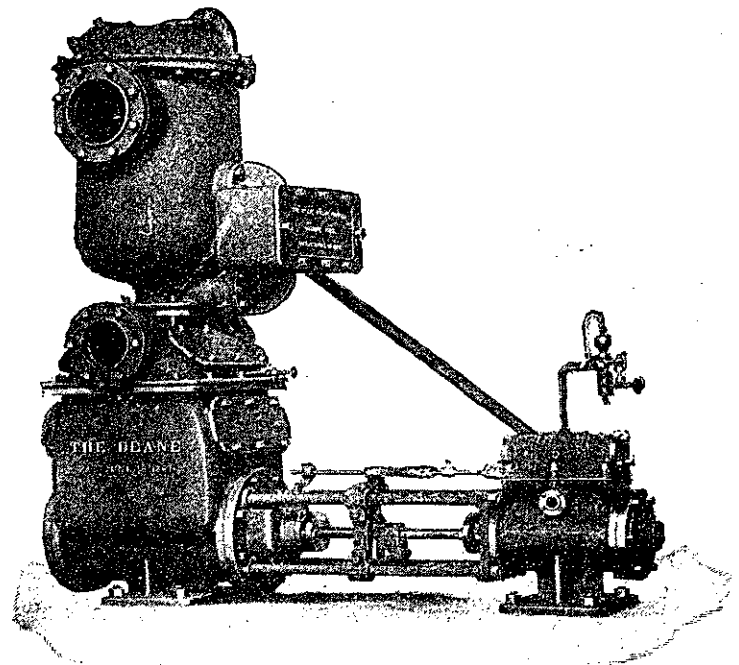
DRESS SUITS, SILK LINED, TO ORDER, \$45.

Dress Suits to Let.

THE DEANE STEAM PUMP CO., HOLYOKE, MASS.

Boston Office 54 Oliver Street.

PUMPING MACHINERY OF EVERY DESCRIPTION



DEANE INDEPENDENT
CONDENSING APPARATUS.



The Richmond Straight Cut No. 1 Cigarettes.

Cigarette Smokers who are willing to pay a little more than the price charged for the ordinary trade cigarettes, will find this brand superior to all others.

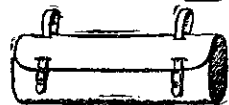
These **Cigarettes** are made from the brightest, most delicately flavored, and highest cost **Gold Leaf** grown in Virginia. This is the **Old and Original Brand of Straight Cut** Cigarettes, and was brought out by us in the year 1875.

Beware of imitations, and observe that the firm name as below is on every package.

ALLEN & GINTER
THE AMERICAN TOBACCO CO., SUCCESSOR,
 Manufacturer, **RICHMOND, VIRGINIA.**

FOR THE BICYCLE.

DON'T RIDE WITHOUT A REPAIR KIT. FOR YOU.



POND'S EXTRACT is unequalled for quickly healing all kinds of **WOUNDS, BRUISES, LAMENESS** or **RHEUMATISM.**

Rub thoroughly with POND'S EXTRACT after every ride to keep the muscles supple, pliant, strong. Try POND'S EXTRACT OINTMENT for PILES.

AVOID SUBSTITUTES - Weak, Watery, Worthless.
POND'S EXTRACT CO., 76 Fifth Ave., New York.

50 YEARS' EXPERIENCE.

PATENTS

TRADE MARKS, DESIGNS, & COPYRIGHTS, &c.

Anyone sending a sketch and description may quickly ascertain, free, whether an invention is probably patentable. Communications strictly confidential. Oldest agency for securing patents in America. We have a Washington office. Patents taken through Munn & Co. receive special notice in the

SCIENTIFIC AMERICAN,
 beautifully illustrated, largest circulation of any scientific journal, weekly, terms \$3.00 a year; \$1.50 six months. Specimen copies and **HAND BOOK ON PATENTS** sent free. Address

MUNN & CO.,
 361 Broadway, New York.

WE wish to call your attention to our new store, which we have opened at **329 COLUMBUS AVENUE**, where we shall carry a full line of **MEN'S FURNISHING GOODS**, comprising all the latest styles in . . .

*Neckwear, Collars and Cuffs, Hosiery, Gloves,
 White and Fancy Bosom Shirts, Underwear.*

NEW AND NOBBY GOODS AT LOWEST PRICES.

329 COLUMBUS AVENUE,
 (Just below Conklin's Pharmacy.)

A. COHEN.

AGENCY FOR CAMBRIDGE LAUNDRY.

Established 1843.

Incorporated 1895.

"STUDENTS," ATTENTION!

LARGEST STOCK AND LOWEST PRICES
 . . . ON . . .

MATHEMATICAL INSTRUMENTS

AND DRAWING MATERIALS OF ALL KINDS, at

FROST & ADAMS COMPANY'S.

IMPORTERS AND WHOLESALE DEALERS,

37 CORNHILL, - - - BOSTON.

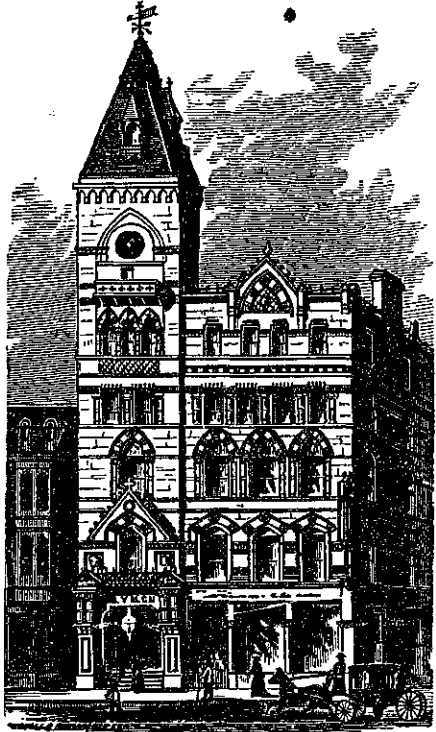
"SPECIAL RATES TO COLLEGES."

NEW ILLUSTRATED CATALOGUE FREE.

**THE
Union Gymnasium**

48 BOYLSTON ST. (near Tremont).

PRACTICAL.
—
**Complete
Modern
Apparatus.**
—
**Popular
Classes.**
—
**Terms,
\$5 and \$8
per Year.**



POPULAR.
—
**Extra
Large
Lockers.**
—
**Competent
Instructors.**
—
**No Extra
Charge
for Instruction**

BOSTON YOUNG MEN'S CHRISTIAN UNION.

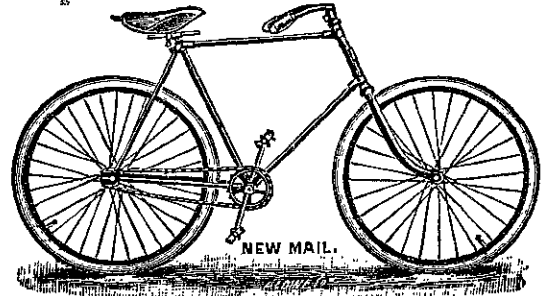
WM. H. BALDWIN, Pres.

GEORGE PEIRCE, Sec'y.

NEW MAIL

HIGHEST GRADE LIGHT ROADSTER.

\$85.



MEN'S AND LADIES' pattern . . . \$85
Also **TEMPLAR** medium grade Men's Wheel . \$60
ATALANTA, Ladies' Pattern . . . \$60
Boys' and Girls' Wheels . . . \$15 up

Now closing out a few Shopworn and Secondhand
Wheels, taken in trade, at very low prices. Bargains.
\$25, \$30, etc.

Catalogue and Secondhand list.

.. WILLIAM READ & SONS ..

107 WASHINGTON STREET, BOSTON.

Elmer Chickering

The Leading Photographer.

SPECIAL RATES TO STUDENTS.

TH**ERE** is not a photographer in New England who has been more successful than Elmer Chickering, of No. 21 West Street, and people who desire to have first-class photographs taken, of themselves, or of their friends, should go to this gallery. His success in the business is wonderful. His pictures are admitted to be exact reproductions of the subject, and are remarkable for their clearness and fidelity in detail. Among his patrons are the leading citizens of the United States, including presidents, governors, mayors, and others prominent in official lines, the highest military officers, the most prominent opera singers, the leading actors and actresses. Far and near his pictures are known. In Europe as well as America they are highly admired. Mr. Chickering is a host in himself, but with good judgment he has surrounded himself with a corps of operators and assistants in his operating rooms who have no superiors, while in his office is to be found young lady attendants who thoroughly understand how to please patrons, and by their uniform courtesy add much to the popularity of "Chickering's Studio."

NECKWEAR

UMBRELLAS

THE L. E. FLETCHER CO.

College Hatters and Outfitters.

Latest Styles and Popular Prices. Custom Shirts a Specialty.

M. I. T. CO-OPERATIVE SOCIETY.

No. 158 Boylston Street, Boston.

GLOVES

CANES